



*Photo Courtesy of Joel Trick, 2016*

## **Wisconsin Kirtland's Warbler 2016 Season Report**

This season marked the 9th year of Kirtland's warbler monitoring in Wisconsin. From only seven Kirtland's found in 2008 to 30 in 2016, we have witnessed a growing and geographically expanding population due to the conservation efforts and support from many dedicated partners and individuals. This season had numerous successes; an expansion in the Adams County breeding site and new breeding areas in northern Wisconsin, continued and new habitat management projects, three field trips, the initiation of research studies, continued projects such as adult and nestling banding and the playback experiment, continuation of the state-wide census, new nest monitors, new and returning partnerships, and the growing public interest and care for this compelling warbler.

On May 14, 2016, the first Kirtland's of the season was detected at the Adams County site by Ashley Hannah (UW student and Kirtland's monitor). In the snow, wind, and cold AJPI (a male banded at the site in 2012) was observed low in a red pine. Aged to be 5 years old, AJPI is our third oldest Kirtland's at the Adams County site. On May 16, four male Kirtland's were heard by Barry Benson (U.S. Department of Agriculture Wildlife Services) while checking cowbird traps. Over the course of the week more Kirtland's were detected and many of the returning warblers were on territories that they held in previous years.

Kirtland's were detected at potentially two new locations outside of the main breeding site in Adams County. During the state-wide census, volunteer Alyssa DeRubeis reported two males at a pine stand north of the main site. A second visit to this site confirmed that Kirtland's had established territories and were nesting. A possible second new site was reported by a local naturalist and we hope to confirm it as a new breeding area in 2017.

The northern counties proved successful as breeding areas; three nests were found in Marinette, one in Bayfield (a new nesting site), and a probable nest in Vilas County. If a nest is confirmed in Vilas County next year, this will be a new nesting site. With high nesting success observed in 2016 at the northern sites, we are becoming more confident that northern pine habitats will be important for future nesting and continued reproductive success for Kirtland's warblers.

Our partnerships continue to grow and we are pleased to be working with the University of Wisconsin on research at the Adams County site. We continue habitat projects with the U.S. Fish and Wildlife Service Partners Program and with Marinette, Bayfield, and Vilas County Forests. Please enjoy the following report that summarizes the highlights for the 2016 Kirtland's breeding season.

# Kirtland's Warbler Season Summary

## Summary Highlights

- 18 males and 13 females were confirmed in Adams County, 6 males and 3 females in Marinette County, 3 males and 1 female in Bayfield County, 1 male in Vilas County
- 17 nests were confirmed by 13 pairs in Adams County, 3 nests by 3 pairs in Marinette, 1 nest in Bayfield by 1 pair
- 21 total nests: 17 in Adams County, 3 in Marinette County, 1 in Bayfield
- 10 nests were confirmed successful: 7 in Adams County, 2 in Marinette County, 1 in Bayfield
- 11 nests failed: 10 in Adams (5 depredation, 4 cowbird parasitism, 1 unknown) 1 in Marinette (depredation).
- A minimum of 37-38 young fledged: 22-23 in Adams County, 10 in Marinette, 5 in Bayfield County



Sarah Warner (USFWS) and Jack Swelstad (volunteer) band a 6-day old nestling in Marinette County. This nestling successfully fledged the nest. *Photo courtesy of Jack Swelstad.*

## Adams County Summary Data

*Table 1. 2008—2016 comparison of Kirtland's Warbler nest data, Adams County. Includes numbers of males confirmed, returning males (color-banded males present that were also present the previous year), number of pairs, number of nests, successful nests (determined if nestlings fledge the nest), and an estimated number of fledglings.*

Kirtland's Warbler Data for Adams County, WI, 2008-2016						
Year	Number of Males	Returning Males	Number of Pairs	Number of Nests	Successful Nests	Estimated Fledged
2008	7	-	5	5	2 (40%)	10
2009	10	5 (71%)	10	10	6-7 (60—70%)	23—27
2010	20	10 (100%)	11	16	3-5 (19—31%)	12—18
2011	20	16 (80%)	11	11	4 (36%)	9—17
2012	20	14 (70%)	10	14	4 (29%)	8—13
2013	16	13 (65%)	9	12	4 (33%)	13
2014	11	7 (44%)	7	8	3 (38%)	8—10
2015	15	8 (73%)	14	15	12 (80%)	34—51
2016	18	10 (66%)	13	17	7 (41%)	22—23

# Kirtland's Warbler Census Summary

## Census Highlights

- Census period: June 6-20
- 11 Volunteers and 8 staff surveyed 54 stands in 6 Wisconsin Counties (Figure 1)
- Douglas County (5 stands), Bayfield County (6 stands), Vilas County (4 stands), Marinette County (16 stands), Jackson County (11 stands), Adams County (12 stands)
- 30 singing males were detected during the census period (Figures 1, 2)
- 10 singing males recorded in northern counties: 1 in Vilas, 3 in Bayfield County, 6 in Marinette County
- 20 singing males recorded at the Adams County breeding site. 2 of these males did not remain at the site for the entire breeding season

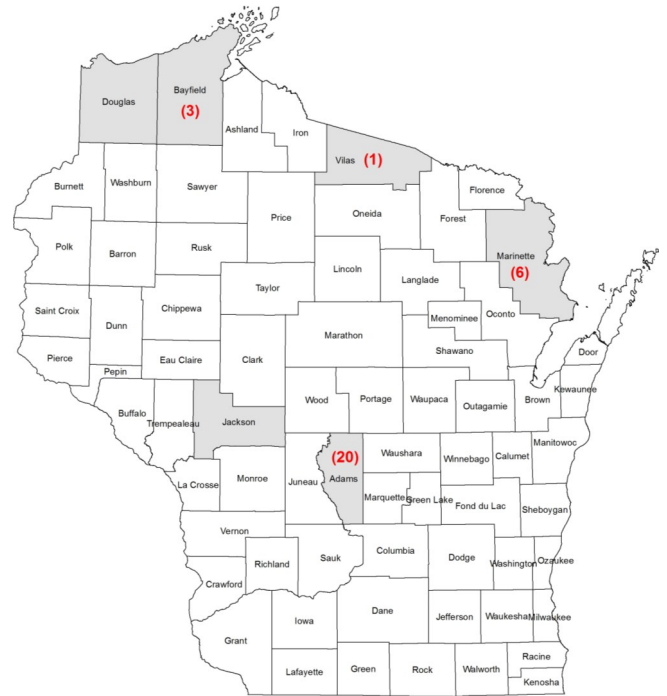


Figure 1. Wisconsin counties surveyed in 2016. Number represents singing males confirmed during the census.



Top, Right: An un-banded Kirtland's male, Marinette County. This adult male was banded during the 2016 season. Photos Courtesy of Joel Trick.

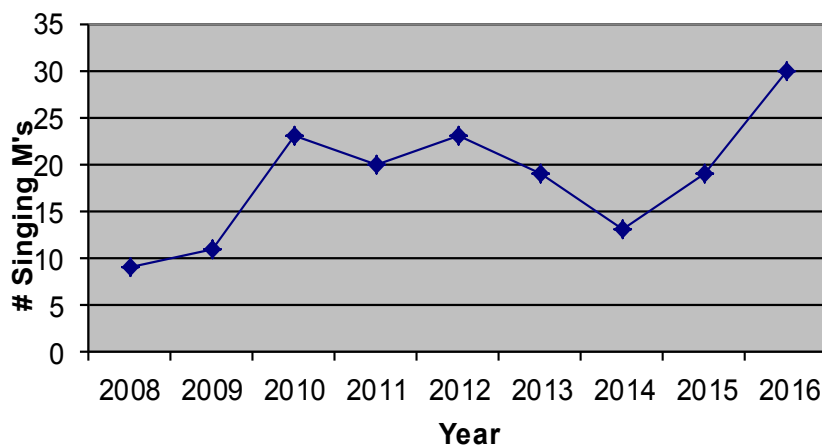


Figure 2. Singing males recorded during the Wisconsin census 2008-2016. In 2007, 8 males were documented at the Adams site, but a statewide census was not conducted that year.



## Kirtland's Warbler Banding Summary

### Adult and Nestling Banding Highlights

- 13 adult males and 1 female were captured and banded in 2016
- 7 males were banded in Adams County, 3 males were banded in Bayfield, 3 males and 1 female in Marinette
- Of the newly banded birds, 7 were second-year (SY), 6 were after-second-year (ASY) and 1 could only be determined to be after-hatch-year (AHY, a broader category that includes SY and ASY)



Top: Nest in Bayfield County with 5 nestlings. *Photo Courtesy of Eric North.* Left: Aging a male Kirtland's warbler using plumage characteristics. Bottom: Ron Refsnider and Joel Trick (retired USFWS biologists), Ashley Hannah and Lucero Serna (UW students), and Josh Cummings (monitor) help to band adults and nestlings in Adams County. *Photos Courtesy of Sarah Warner*

- 30 nestlings were banded in 2016 from 7 separate nests
- 4 nests (15 nestlings) in Adams County, 2 nests (10 nestlings) in Marinette, 1 nest (5 nestlings) in Bayfield County
- 30 banded nestlings are believed to have fledged successfully

## Kirtland's Warbler Playback Experiment

### Study Highlights

- The playback experiment involves the use of audio playback of Kirtland's songs to attract and consolidate roaming northern birds to attempt to establish new breeding populations
- Playbacks were conducted in Bayfield County Forest and Marinette County Forest
- 3 male and 1 female Kirtland's were observed at the playback site in Bayfield and 4 males and 3 females were observed at the playback site in Marinette
- 1 nest in Bayfield produced 5 young, and 2 of 3 nests in Marinette fledged, producing 10 young
- This is the first recorded nesting in Bayfield County and 15 young is a record high level of productivity for the northern counties





# Adams County Cowbird Trapping

## Trapping Summary

- 5 traps were placed at the Adams County breeding site for 12 weeks
- Traps were placed two weeks earlier than previous years and were moved to new locations that were within 0.5 miles from the closest Kirtland's warbler core territory
- 266 cowbirds were captured (168 males, 95 females, 3 juveniles) - the 3rd largest total since 2009
- For comparison, a total of 363 cowbirds were caught in 2015, 110 cowbirds were caught in 2014, 207 were caught in 2013, 216 in 2012, 166 in 2011, 216 in 2010, and in 2009 a total of 303 cowbirds were caught
- Traps were placed and managed by Barry Benson, USDA APHIS-Wildlife Services
- Cowbird parasitism has not been observed at the northern sites; therefore, cowbird traps are not necessary in these areas



Left: Cowbird trap with poles and wires to distract sharp-shinned hawks from preying on trapped cowbirds, Adams County. *Photo Courtesy of Barry Benson (USDA)*. Bottom: Natural Resources Foundation Kirtland's Warbler Trip participants watch a male Kirtland's, Adams County. *Photo Courtesy of Rich Staffen (DNR)*.



## Kirtland's Warbler Field Trips

### Trip Summary

- 3 field trips to the Adams County site were offered in 2016
- 1 on May 16 (23 people) and 1 on May 20 (33 people) through the Natural Resources Foundation of Wisconsin
- 1 on May 26 (14 people) for the New Jersey Audubon Eco-Center
- The field trips were attended by a combined total of approximately 70 people
- The field trips raised funds (approximately \$1,685) that will be used for Kirtland's warbler conservation in Wisconsin



# University of Wisconsin's Kirtland's Warbler Research in Adams County

## Nest Cameras

- Purpose of Study: To identify what predators depredate Kirtland's nests
- 11 cameras were deployed on 11 nests
- Videos will be reviewed this winter and data will be used to help guide management decisions

## Cowbird Tracking

- Purpose of Study: To determine the movements and behavioral patterns of cowbirds
- 14 cowbirds were captured, banded, and received transmitters
- This study will provide information on cowbird behavior which will help guide decisions for cowbird management

## Nestling Tracking

- Purpose of Study: To determine habitat use of juvenile Kirtland's warblers
- Four transmitters were attached to four nestlings (one nestling each from four nests)
- All broods were banded, including nestlings with the transmitters
- This study will provide information on the habitat needs for juveniles and will guide habitat management decisions

## Vegetation Analysis

- Purpose of Study: To determine the micro and macro habitat features important for nesting sites and territory selection
- Vegetation type, height, and density were collected at all nest sites (micro habitat) and within territories (macro habitat) in Adams, Marinette, and Bayfield Counties
- Comparisons will be made between successful and unsuccessful nests, and among Adams, Marinette, and Bayfield county sites
- This study will inform habitat needs for nesting Kirtland's warblers and will help determine habitat management decisions



Top: Ashley Hannah practices setting up a camera, Adams County. Bottom: Dr. Anna Pidgeon and Ashley Hannah (UW-Madison) prepare to apply a transmitter to a nestling. Josh Cummings and Kaitlyn Reintsma (monitors) assist, Adams County. *Photo Courtesy of Sarah Warner.*



## Acknowledgements for the 2016 Kirtland's Warbler Nesting Season

The Kirtland's Warbler 2016 partnership includes the Wisconsin Department of Natural Resources (Kim Grveles, Nick Anich, Davin Lopez, Richard Staffen, Amy Staffen, Aaron McCullough, nest monitors Josh Cummings and Kaitlyn Reintsma); U.S. Fish and Wildlife Service (Sarah Warner and retired biologists Joel Trick and Ron Refsnider); U.S. Fish and Wildlife Service Partners Program (Gary VanVreede and Mark Pfof); U.S. Department of Agriculture Wildlife Services (Barry Benson); Property Owners are Timberland Investment Resources, Meteor Timber, Wisconsin Dunes and Marinette, Bayfield, Douglas, and Vilas County Forests; University of Wisconsin (Ashley Hannah, Lucero Serna, Dr. Anna Pidgeon); and many volunteers. The information in this report was compiled and written by Sarah Warner, graphs and figures were made by Rich Staffen and Kim Grveles, data were provided by nest monitoring, surveys, and banding efforts.

There are many enthusiastic and dedicated partners that we wish to thank for making the season such a success. We are grateful for the efforts from the following collaborators:

Timberland Investment Resources allowed us to use their lands to conduct monitoring, banding and cowbird trapping, and provided support for habitat enhancement projects. Meteor Timber and Wisconsin Dunes supported monitoring activities on their properties. Bayfield and Marinette County Forests continue to be extremely supportive by developing plans for the management of Kirtland's habitat and conducting habitat improvement projects.

The U.S. Department of Agriculture (USDA) Wildlife Services managed cowbird traps, with the efforts of Wildlife Specialist Barry Benson. The Natural Resources Foundation of Wisconsin (NRF) offered field trips that provided outreach for public engagement and generated funding to cover housing costs for the nest monitors. Barry Benson, Davin Lopez, Jon Robaidek (DNR), Kim Grveles, Rich Staffen, Amy Staffen, Sarah Warner, and Ashley Hannah were trip leaders for the field trips.

The U.S. Army Construction Engineering Research Laboratory provided funding for the Kirtland's Warbler Conspecific Playback Experiment. A collaborator on the project is Mike Ward (Illinois Natural History Survey). A number of people helped with the playback experiment: We thank Jason Bodine, Bayfield County Forest; and Pete Villas, Marinette County Forest for their support of this project. Eric North, Jack Swelstad, Aaron McCullough, Kaitlyn Reintsma, Janet Brehm, Ryan Brady, Dick Verch, Ashley Hannah, and Craig Leitzke provided invaluable help with surveys and fieldwork.

The WI Department of Natural Resources Natural Heritage Conservation (NHC) Bureau provided funding to support the work of Kim Grveles and Davin Lopez for project coordination, management, and logistical support. The NHC provided funding to Rich Staffen, Amy Staffen, Nick Anich, Josh Cummings, Kaitlyn Reintsma, Terrell Hyde, and Abby Lewandowski for project support. Aaron McCullough's assistance was supported by the DNR Bureau of Wildlife Management. The U.S. Fish and Wildlife Service (USFWS) Ecological Services and the DNR contributed funding to help offset the costs of cowbird trap operation. USFWS Ecological Services provided funding to support the work of Sarah Warner that involved project coordination, management, and banding efforts. The USFWS Partners for Fish and Wildlife Program biologists Mark Pfof and Gary VanVreede provided funding, logistical support, and efforts for habitat projects at the Adams and Marinette County sites. We thank the members of the Kirtland's Warbler Recovery Team for their efforts to protect and conserve the Kirtland's warbler and for their input and guidance on various aspects of the Wisconsin project.

This year our outstanding Kirtland's warbler monitors were Ashley Hannah, Josh Cummings, and Kaitlyn Reintsma. Nancy Livingston provided lodging for one of our nest monitors, as she has for the past eight years. Ron Refsnider and Joel Trick contributed their expertise to make the color-banding efforts a success and the USFWS covered costs associated with their travel.

The generous efforts of numerous enthusiastic birders allowed us to survey for Kirtland's warblers for the state-wide census at many Wisconsin sites. We wish to thank Jim Baughman, Kurt Brownell, Timothy Collins, Alyssa DeRubeis, Patrick Hager, Dan Jackson, Lennie Lichter, Mike Peczynski, Donna Roche, Glenna Schwalbe, Paul Schwalbe, Jack Swelstad, Steve LaValley (DNR), and Eric North for their survey assistance. Pete Villas, Marinette County Forest Administrator, provided assistance in identifying potential suitable habitat to survey for Kirtland's warblers.

Our work with Kirtland's warblers in Wisconsin generates a great deal of interest, and our success is a tribute to the many individuals and organizations involved in the project. We are grateful to receive tremendous support from the public and conservation community. As has been the case throughout the life of the project, we continue to be dependent upon the critical contributions of our numerous partners. A heart-felt thank you to you all!